WHAT IS CLAIMED IS:

1. A high throughput method for screening lubricating oil composition samples, under program control, comprising the steps of:

(a) providing a plurality of different lubricating oil composition samples, each sample comprising (i) a major amount of at least one base oil of lubricating viscosity, (ii) a minor amount of at least one lubricating oil additive;

(b) measuring the deposit formation of each sample to provide deposit formation data for each sample; and,

(c) outputting the results of step (b).

2. The method of claim 1, wherein the base oil is a natural or synthetic oil.

3. The method of claim 1, wherein the at least one lubricating oil additive is selected from the group consisting of antioxidants, anti-wear agents, detergents, rust inhibitors, dehazing agents, demulsifying agents, metal deactivating agents, friction modifiers, pour point depressants, antifoaming agents, co-solvents, package compatibilisers, corrosion-inhibitors, ashless dispersants, dyes, extreme pressure agents and mixtures thereof.

4. The method of claim 1, wherein the at least one lubricating oil additive is selected from the group consisting of antioxidants, detergents, ashless dispersants and mixtures thereof.

5. The method of claim 1, wherein the step of measuring the deposit formation of each sample comprises heating the sample to a predetermined temperature in the presence of a substrate and determining the amount of deposits formed on the substrate after a predetermined period of time.

6. The method of claim 5, wherein the substrate is a transparent material.

7. The method of claim 6, wherein the step of determining the amount of deposits formed on the transparent substrate comprises determining the opacity or light scattering of the sample and comparing the determined opacity or light scattering with the opacity or light scattering of a reference sample.

8. The method of claim 7, wherein the opacity of the sample is determined by measuring the intensity of light passed through a sample.

9. The method of claim 7, wherein the plurality of samples are in a linear array and are sequentially moved to a measuring station between a light source and a photocell for individually measuring the deposit formation of each sample.

10. The method of claim 5, wherein the step of determining the amount of deposits formed on the substrate comprises determining the weight of the substrate containing deposits and comparing the determined weight with the weight of the substrate.

11. The method of claim 1, wherein the step of measuring the deposit formation of each sample comprises heating a substrate to a first predetermined temperature and the sample to a second predetermined temperature; contacting the substrate with the sample and determining the amount of deposits formed on the substrate after a predetermined period of time.

12. The method of claim 11, wherein the substrate is aluminum.

13. The method of claim 11, wherein the first predetermined temperature is about 100°C to about 400°C and the second predetermined temperature is about 80°C to about 250°C.

14. The method of claim 1, wherein the step of measuring the deposit formation of each sample comprises heating one end of a substrate to a first predetermined temperature and the opposite end of the substrate to a second predetermined temperature; contacting the substrate with the sample and determining the temperature at which deposits formed on the substrate.

15. The method of claim 1, wherein a robotic assembly selectively retrieves the samples from an array of samples and individually positions the samples in a testing station for determination of the deposit formation.

16. The method of claim 15, wherein said robotic assembly is controlled by a computer.

17. The method of claim 1, wherein the step of outputting comprises storing the result of step (c) on a data carrier.

18. The method of claim 1, further comprising the step of using the result of step (c) as a basis for obtaining a result of further calculations.

19. The method of claim 1, wherein the at least one lubricating oil additive further comprises a diluent oil to form an additive concentrate.

20. The method of claim 1, wherein the lubricating oil composition samples have a volume of no more than about 50 ml.

21. The method of claim 1, wherein the lubricating oil composition samples have a volume of no more than about 20 ml.

22. The method of claim 1, wherein the lubricating oil composition samples have a volume of no more than about 15 ml.

23. The method of claim 1, wherein the lubricating oil composition samples have a volume of no more than about 10 ml.

24. A system for screening lubricant performance, under program control, comprising:

a) a plurality of test receptacles, each receptacle containing a different lubricating oil composition sample comprising (i) a major amount of at least one base oil of lubricating viscosity, (ii) a minor amount of at least one lubricating oil additive;

(b) receptacle moving means for individually positioning the test receptacles in a testing station for measurement of deposit formation of the respective sample;

(c) means for measuring the deposit formation of each respective sample in the testing station to obtain deposit formation data associated with the sample and for transferring the deposit formation data to a computer controller.

25. The system of claim 24, wherein the receptacle moving means comprises a movable carriage.

26. The system of claim 24, wherein the receptacle moving means comprises a robotic assembly having a movable arm for grasping and moving a selected individual receptacle.

27. The system of claim 24, wherein the receptacle moving means comprises means for agitating the test receptacles.

28. The system of claim 24, wherein the testing station includes a light source and a photocell aligned with the light source.

29. The system of claim 24, wherein each test receptacle has a bar code affixed to an outer surface thereof.

30. The system of claim 29, further comprising a bar code reader.

31. The system of claim 24, wherein the base oil of lubricating viscosity is a natural or synthetic oil.

32. The system of claim 24, wherein the at least one lubricating oil additive is selected from the group consisting of antioxidants, anti-wear agents, detergents, rust inhibitors, dehazing agents, demulsifying agents, metal deactivating agents, friction modifiers, pour point depressants, antifoaming agents, co-solvents, package compatibilisers, corrosion-inhibitors, ashless dispersants, dyes, extreme pressure agents and mixtures thereof.

33. The system of claim 24, wherein the at least one lubricating oil additive is selected from the group consisting of antioxidants, detergents, ashless dispersants and mixtures thereof.

34. A combinatorial lubricating oil composition library comprising lubricating oil composition deposit formation data for a plurality of different lubricating oil compositions comprising (a) a major amount of at least one base oil of lubricating viscosity and (b) a minor amount of at least one lubricating oil additive.